

WHAT IS CLAIMED IS:

1. A liquid drop discharging head comprising at least one ejector unit arranged along a main scanning direction, wherein:

each ejector unit includes a first ejector group arranged at one side in the main scanning direction and a second ejector unit arranged at another side in the main scanning direction,

each ejector group includes a plurality of ejectors,

all of the ejectors are arranged two-dimensionally in a predetermined plane,

each ejector includes at least one nozzle,

all of the nozzles are offset from each other in a sub-scanning direction which is substantially perpendicular to the main scanning direction,

the nozzles of each ejector group are alternately arranged so that when they are viewed in the main scanning direction, a nozzle of one ejector of the first ejector group, a nozzle of one ejector of the second ejector group, a nozzle of another ejector of the first ejector group, a nozzle of another ejector of the second ejector group, and so on are arranged in this order along the sub-scanning direction.

2. A liquid drop discharging head as claimed in claim 1, further comprising a piezoelectric actuator for discharging a liquid drop.

3. A liquid drop discharging head as claimed in claim 1, wherein each nozzle includes a liquid discharge passage, a communication passage, and a liquid discharge port.

4. A liquid drop discharging head as claimed in claim 1, wherein each ejector includes a nozzle and a pressure generation chamber.

5. A liquid drop discharging head as claimed in claim 1, wherein in each ejector unit, all of the ejectors are connected to each other through one common passage.

6. A liquid drop discharging head as claimed in claim 5, wherein in each of the common passages, one end is closed and another end is connected to one same second common passage.

7. A liquid drop discharging head as claimed in claim 6, wherein the second common passage extends parallel to the sub-scanning direction, has one liquid supply port at one end side thereof, and is connected to a liquid supply source through the liquid supply port.

8. A liquid drop discharging head as claimed in claim 1, wherein all of the ejectors in each ejector unit together form a sawtooth shape when viewed in a plan view.

9. A liquid drop discharging head as claimed in claim 1, wherein all of the ejectors in each ejector unit together form a letter V shape.

10. A liquid drop discharging head as claimed in claim 1, wherein in each ejector unit, all of the ejectors of the first ejector group are connected to each other through one common passage and all of the ejectors of the second ejector group are

connected to each other through another common passage.

11. A liquid drop discharging head as claimed in claim 10, wherein in the one common passage, one end is closed and another end is connected to one second common passage, and wherein in the another common passage, one end is closed and another end is connected to another second common passage.

12. A liquid drop discharging head as claimed in claim 11, wherein each of the one second common passage and the another second common passage extends parallel to the sub-scanning direction, has one liquid supply port at one end side thereof, and is connected to a liquid supply source through the liquid supply port.

13. A liquid drop discharging head as claimed in claim 11, wherein the one second common passage and the another second common passage are disposed outside of the ejector unit.

14. A liquid drop discharging head as claimed in claim 11, wherein the one second common passage and the another second common passage are disposed so as to cross the ejector unit.

15. A liquid drop discharging head as claimed in claim 10, wherein in each of the one common passage and the another common passage, one end is closed and another end is connected to one same second common supply passage.

16. A liquid drop discharging head as claimed in claim 15, wherein the second

common passage extends parallel to the sub-scanning direction, has one liquid supply port at one end side thereof, and is connected to a liquid supply source through the liquid supply port.

17. A liquid drop discharging head as claimed in claim 15, wherein the second common passage extends parallel to the sub-scanning direction, has one liquid supply port nearly at a center thereof, and is connected to a liquid supply source through the liquid supply port.

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18. A liquid drop discharging device comprising:  
a liquid drop discharging head for applying a liquid drop to an object; and  
a main scanning mechanism for relatively moving the object and the liquid drop discharging head in a main scanning direction,

wherein the liquid drop discharging head includes at least one ejector unit arranged along the main scanning direction,

each ejector unit including a first ejector group arranged at one side in the main scanning direction and a second ejector group arranged at another side in the main scanning direction,

each ejector group includes a plurality of ejectors,

all of the ejectors are arranged two-dimensionally in a predetermined plane,

each ejector includes one nozzle,

all of the nozzles are offset from each other in a sub-scanning direction which is substantially perpendicular to the main scanning direction,

the nozzles of each ejector group are alternately arranged so that when they are viewed in the main scanning direction, a nozzle of one ejector of the first ejector group,

a nozzle of one ejector of the second ejector group, a nozzle of another ejector of the first ejector group, a nozzle of another ejector of the second ejector group, and so on are arranged in this order along the sub-scanning direction.

19. A liquid drop discharging device as claimed in claim 18, further comprising a sub-scanning mechanism for relatively moving the object and the liquid drop discharging head in the sub-scanning direction.

20. A liquid drop discharging device as claimed in claim 18, further comprising a piezoelectric actuator for discharging a liquid drop.